

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P637308

Luminaire Tested: GWS-SA4C-750-U-AFL-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P637308
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-47)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA4C-750-U-AFL-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (64) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18013.8 lumens
Efficiency: N/A
Efficacy: 140.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G2

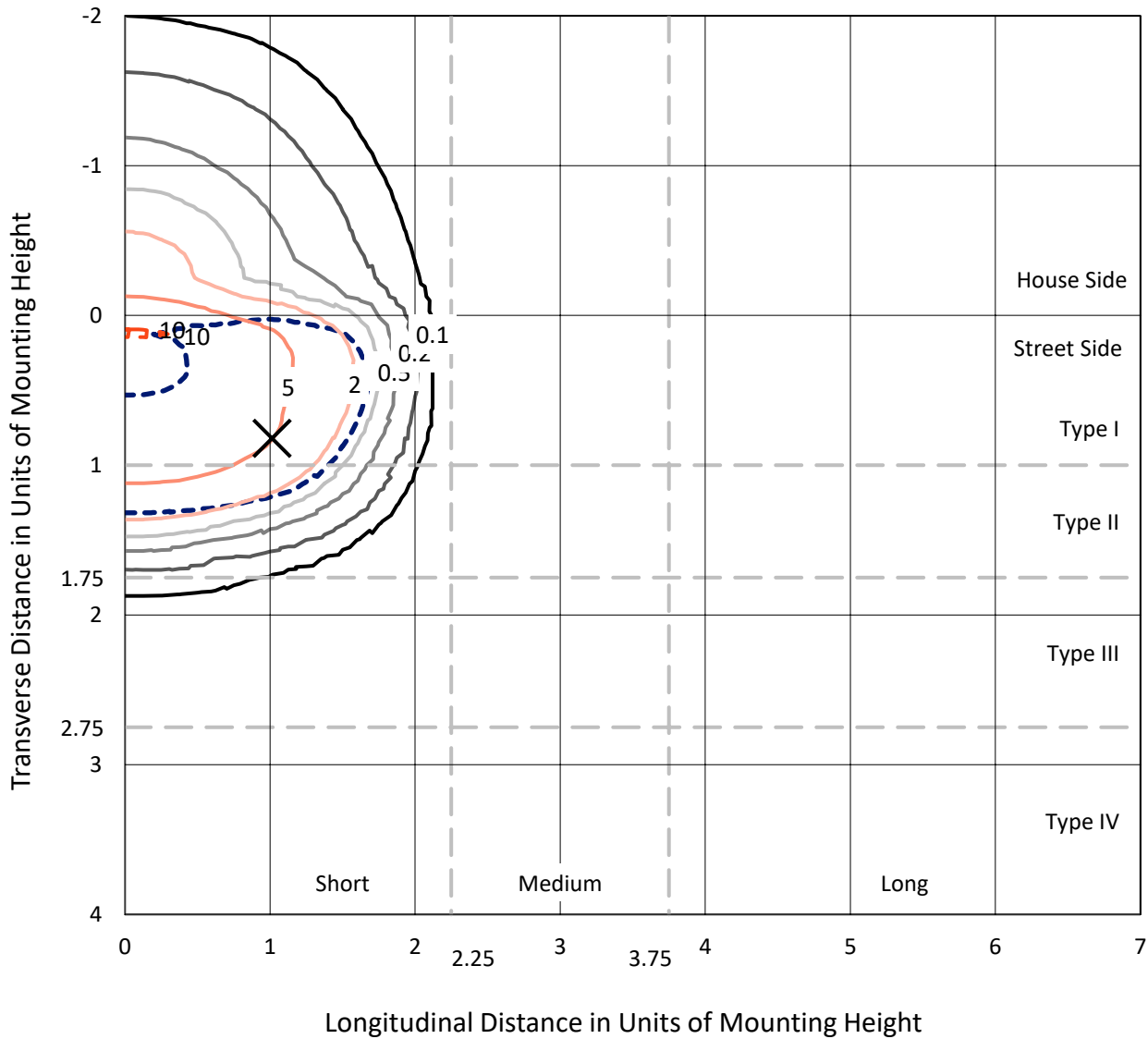
Input Watts (W): 128.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

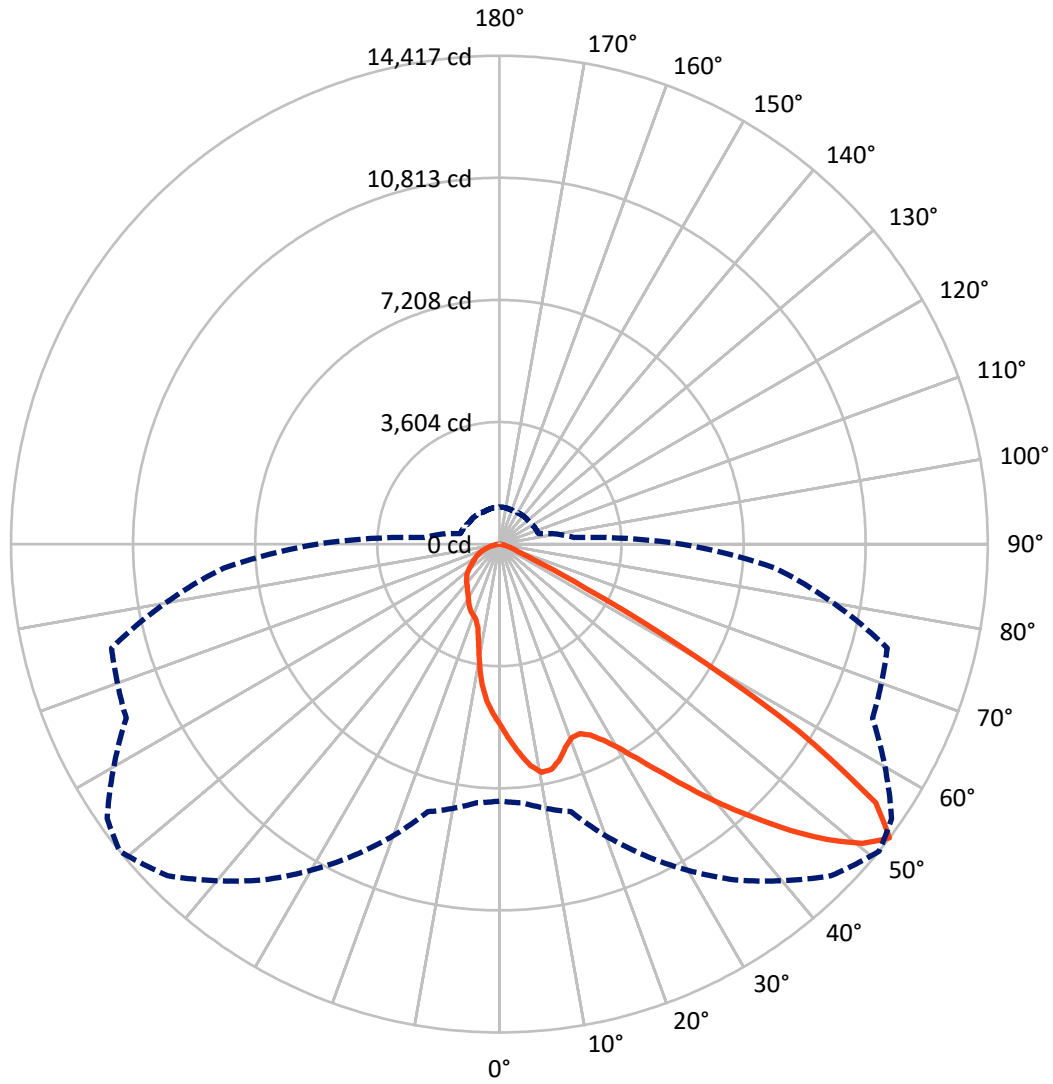
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.5 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 51-Deg Lateral - - - Horizontal Cone Through 52.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3509.8 | 0.0 | 3509.8 |
| | % Fixture | 19.5 | 0.0 | 19.5 |
| Street Side | Lumens | 14504.0 | 0.0 | 14504.0 |
| | % Fixture | 80.5 | 0.0 | 80.5 |
| Total | Lumens | 18013.8 | 0.0 | 18013.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 500.5 | 2.8 |
| 10°-20° | 1300.5 | 7.2 |
| 20°-30° | 2114.5 | 11.7 |
| 30°-40° | 3351.0 | 18.6 |
| 40°-50° | 5054.0 | 28.1 |
| 50°-60° | 4372.1 | 24.3 |
| 60°-70° | 991.2 | 5.5 |
| 70°-80° | 292.3 | 1.6 |
| 80°-90° | 37.7 | 0.2 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 18013.8 | 100.0 |
| 0°-180° | 18013.8 | 100.0 |

Coefficient of Utilization



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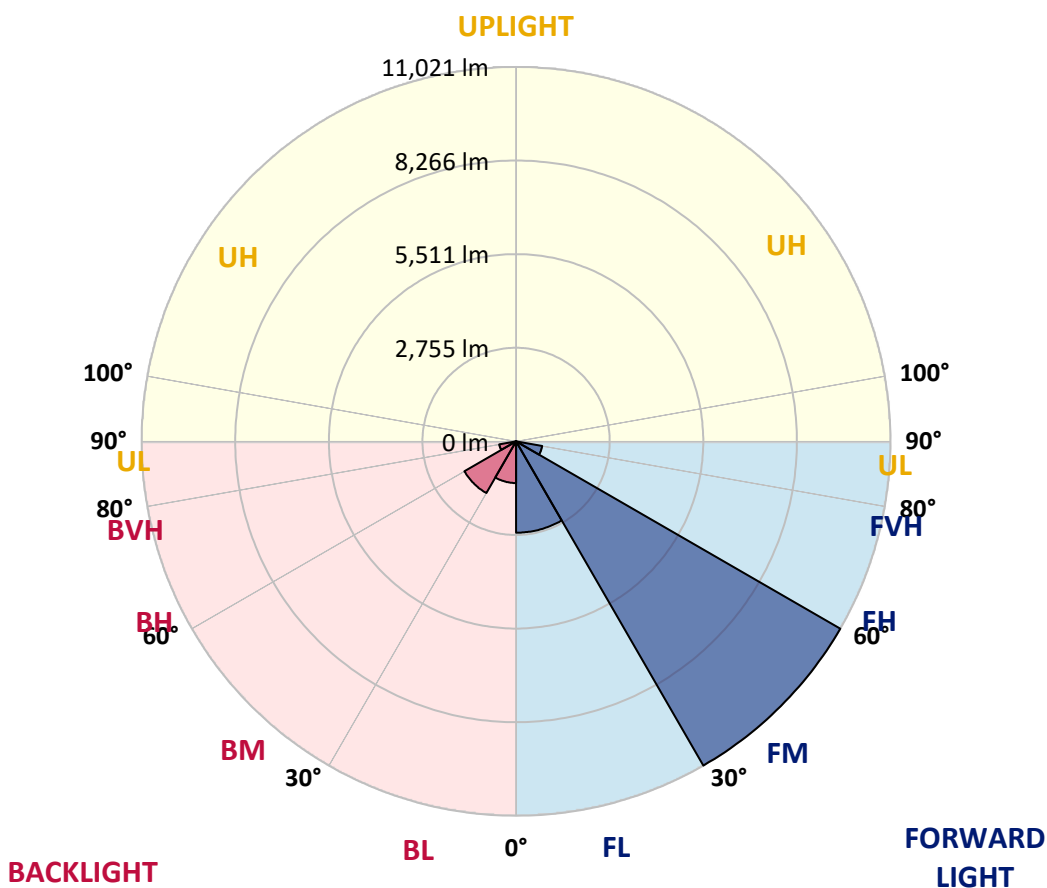
CATALOG NUMBER: GWS-SA4C-750-U-AFL-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2688.6 | 14.9 | | | |
| FM (30°-60°) | 11021.1 | 61.2 | | | |
| FH (60°-80°) | 780.1 | 4.3 | | | G1/1800 |
| FVH (80°-90°) | 14.2 | 0.1 | | | G1/100 |
| BL (0°-30°) | 1226.9 | 6.8 | B3/2500 | | |
| BM (30°-60°) | 1756.1 | 9.7 | B2/2500 | | |
| BH (60°-80°) | 503.4 | 2.8 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 23.5 | 0.1 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 51° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 |
| 2.5° | 5977.1 | 6011.3 | 5958.6 | 5938.7 | 5905.9 | 5849.0 | 5783.5 | 5765.0 | 5624.1 | 5531.6 | 5427.7 |
| 5° | 6577.8 | 6596.3 | 6553.6 | 6510.9 | 6429.8 | 6328.7 | 6202.0 | 6175.0 | 5918.8 | 5706.7 | 5486.0 |
| 7.5° | 6711.6 | 6704.5 | 6741.5 | 6765.7 | 6755.8 | 6715.9 | 6603.4 | 6550.8 | 6244.7 | 5908.8 | 5582.8 |
| 10° | 6182.1 | 6142.2 | 6278.9 | 6441.2 | 6636.2 | 6861.1 | 6848.3 | 6844.0 | 6577.8 | 6180.7 | 5706.7 |
| 12.5° | 5480.3 | 5460.4 | 5571.4 | 5775.0 | 6143.7 | 6641.9 | 6828.3 | 6973.5 | 6878.2 | 6439.7 | 5844.7 |
| 15° | 5078.9 | 5071.8 | 5147.2 | 5293.9 | 5587.1 | 6216.3 | 6614.8 | 6902.4 | 7135.8 | 6717.3 | 5991.4 |
| 17.5° | 5006.3 | 5010.6 | 5036.2 | 5120.2 | 5330.9 | 5849.0 | 6310.2 | 6711.6 | 7336.5 | 7021.9 | 6175.0 |
| 20° | 5218.4 | 5246.9 | 5202.8 | 5215.6 | 5329.4 | 5716.6 | 6102.4 | 6519.5 | 7464.6 | 7328.0 | 6372.8 |
| 22.5° | 5689.6 | 5679.6 | 5582.8 | 5525.9 | 5527.3 | 5797.8 | 6079.6 | 6429.8 | 7548.6 | 7625.5 | 6552.2 |
| 25° | 6223.4 | 6212.0 | 6096.7 | 5970.0 | 5890.3 | 6018.4 | 6243.3 | 6525.2 | 7624.1 | 7897.4 | 6696.0 |
| 27.5° | 6854.0 | 6818.4 | 6690.3 | 6528.0 | 6351.5 | 6407.0 | 6559.3 | 6782.8 | 7740.8 | 8165.0 | 6791.3 |
| 30° | 7464.6 | 7505.9 | 7322.3 | 7130.1 | 6943.7 | 6909.5 | 6997.7 | 7199.9 | 7978.5 | 8478.1 | 6905.2 |
| 32.5° | 8274.6 | 8260.4 | 8056.8 | 7806.3 | 7540.1 | 7514.5 | 7584.2 | 7769.3 | 8405.5 | 8910.9 | 7078.9 |
| 35° | 9255.4 | 9258.2 | 8969.2 | 8630.5 | 8251.8 | 8183.5 | 8300.2 | 8479.6 | 9041.8 | 9497.3 | 7353.6 |
| 37.5° | 10274.6 | 10270.3 | 10018.3 | 9634.0 | 9117.3 | 9020.5 | 9154.3 | 9288.1 | 9837.5 | 10295.9 | 7780.6 |
| 40° | 10989.1 | 11017.6 | 10899.5 | 10697.3 | 10207.7 | 9971.4 | 10089.5 | 10182.0 | 10703.0 | 11235.4 | 8342.9 |
| 42.5° | 11394.8 | 11437.5 | 11463.1 | 11584.1 | 11326.5 | 11074.5 | 11031.8 | 11080.2 | 11476.0 | 12108.0 | 8871.0 |
| 45° | 11481.6 | 11538.6 | 11725.1 | 12173.5 | 12273.1 | 12201.9 | 12062.4 | 11945.7 | 12052.5 | 12727.2 | 9216.9 |
| 47.5° | 11098.7 | 11198.4 | 11596.9 | 12381.3 | 12963.5 | 13187.0 | 13031.8 | 12853.9 | 12385.5 | 12886.6 | 9181.3 |
| 50° | 9581.3 | 9698.1 | 10596.3 | 11957.1 | 13061.7 | 13875.9 | 13890.1 | 13626.8 | 12345.7 | 12426.8 | 8734.4 |
| 52.5° | 7585.6 | 7665.3 | 8179.2 | 10136.5 | 12098.0 | 13847.4 | 14416.8 | 14135.0 | 12153.5 | 11851.7 | 8174.9 |
| 55° | 4533.7 | 4661.8 | 5141.5 | 6687.4 | 9424.7 | 12273.1 | 13485.9 | 13622.5 | 12059.6 | 11369.2 | 7793.5 |
| 57.5° | 1530.2 | 1592.9 | 2051.2 | 2953.7 | 5554.4 | 8986.3 | 10419.7 | 10974.9 | 10947.9 | 10631.8 | 7049.0 |
| 60° | 728.8 | 743.0 | 835.6 | 1120.3 | 2223.4 | 4696.0 | 6167.9 | 6808.4 | 7392.0 | 7450.4 | 4385.7 |
| 62.5° | 555.2 | 563.7 | 610.7 | 671.9 | 893.9 | 1978.6 | 2827.0 | 3316.7 | 3543.0 | 3040.5 | 1597.1 |
| 65° | 464.0 | 471.2 | 506.8 | 545.2 | 607.8 | 856.9 | 1084.7 | 1251.2 | 1127.4 | 878.3 | 761.6 |
| 67.5° | 387.2 | 392.9 | 419.9 | 461.2 | 503.9 | 573.7 | 602.1 | 619.2 | 649.1 | 728.8 | 700.3 |
| 70° | 303.2 | 308.9 | 337.4 | 372.9 | 414.2 | 431.3 | 458.4 | 475.4 | 535.2 | 637.7 | 634.9 |
| 72.5° | 233.4 | 240.6 | 256.2 | 279.0 | 313.2 | 330.2 | 360.1 | 380.1 | 414.2 | 496.8 | 531.0 |
| 75° | 170.8 | 175.1 | 189.3 | 196.4 | 200.7 | 196.4 | 226.3 | 249.1 | 294.7 | 326.0 | 334.5 |
| 77.5° | 69.7 | 78.3 | 75.4 | 75.4 | 89.7 | 108.2 | 123.8 | 138.1 | 169.4 | 187.9 | 189.3 |
| 80° | 28.5 | 31.3 | 37.0 | 41.3 | 49.8 | 64.1 | 74.0 | 79.7 | 93.9 | 105.3 | 113.9 |
| 82.5° | 17.1 | 18.5 | 21.4 | 22.8 | 28.5 | 37.0 | 42.7 | 47.0 | 58.4 | 69.7 | 74.0 |
| 85° | 8.5 | 8.5 | 10.0 | 11.4 | 14.2 | 17.1 | 19.9 | 22.8 | 29.9 | 37.0 | 41.3 |
| 87.5° | 1.4 | 1.4 | 1.4 | 2.8 | 4.3 | 5.7 | 7.1 | 8.5 | 10.0 | 11.4 | 14.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P637308

CATALOG NUMBER: GWS-SA4C-750-U-AFL-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 | 5363.6 |
| 2.5° | 5366.5 | 5289.6 | 5199.9 | 5128.7 | 5046.2 | 4985.0 | 4898.1 | 4844.0 | 4792.8 | 4750.1 | 4718.8 |
| 5° | 5372.1 | 5242.6 | 5056.1 | 4891.0 | 4720.2 | 4557.9 | 4391.4 | 4256.2 | 4135.2 | 4034.1 | 4025.6 |
| 7.5° | 5404.9 | 5218.4 | 4926.6 | 4637.6 | 4304.6 | 3982.8 | 3661.1 | 3399.2 | 3199.9 | 3096.0 | 3074.7 |
| 10° | 5460.4 | 5215.6 | 4794.2 | 4333.0 | 3765.1 | 3246.9 | 2865.4 | 2666.1 | 2550.8 | 2509.6 | 2495.3 |
| 12.5° | 5518.8 | 5208.4 | 4624.8 | 3903.1 | 3114.5 | 2660.5 | 2451.2 | 2427.0 | 2448.4 | 2451.2 | 2449.8 |
| 15° | 5589.9 | 5204.2 | 4411.3 | 3399.2 | 2639.1 | 2388.6 | 2402.8 | 2454.0 | 2503.9 | 2515.3 | 2515.3 |
| 17.5° | 5676.8 | 5194.2 | 4120.9 | 2906.7 | 2341.6 | 2335.9 | 2411.3 | 2479.7 | 2526.6 | 2535.2 | 2535.2 |
| 20° | 5767.9 | 5168.6 | 3763.6 | 2505.3 | 2220.6 | 2303.2 | 2384.3 | 2437.0 | 2469.7 | 2481.1 | 2482.5 |
| 22.5° | 5830.5 | 5100.3 | 3352.3 | 2207.8 | 2145.2 | 2240.5 | 2298.9 | 2353.0 | 2353.0 | 2324.5 | 2316.0 |
| 25° | 5843.3 | 4953.6 | 2906.7 | 2004.2 | 2055.5 | 2143.7 | 2203.5 | 2172.2 | 2113.8 | 2091.1 | 2089.6 |
| 27.5° | 5796.3 | 4740.1 | 2466.9 | 1859.0 | 1947.3 | 2035.6 | 2025.6 | 1980.0 | 1954.4 | 1931.6 | 1940.2 |
| 30° | 5739.4 | 4483.9 | 2085.4 | 1739.5 | 1822.0 | 1908.9 | 1874.7 | 1859.0 | 1840.5 | 1814.9 | 1820.6 |
| 32.5° | 5701.0 | 4197.8 | 1792.1 | 1646.9 | 1738.0 | 1752.3 | 1776.5 | 1775.1 | 1758.0 | 1709.6 | 1706.7 |
| 35° | 5712.4 | 3908.8 | 1595.7 | 1571.5 | 1668.3 | 1662.6 | 1708.2 | 1699.6 | 1581.5 | 1514.6 | 1510.3 |
| 37.5° | 5803.5 | 3631.3 | 1480.4 | 1511.7 | 1557.3 | 1592.9 | 1632.7 | 1530.2 | 1488.9 | 1446.2 | 1449.1 |
| 40° | 5977.1 | 3373.6 | 1417.8 | 1479.0 | 1490.4 | 1543.0 | 1450.5 | 1449.1 | 1430.6 | 1392.1 | 1390.7 |
| 42.5° | 6173.6 | 3155.8 | 1375.1 | 1463.3 | 1447.7 | 1457.6 | 1359.4 | 1370.8 | 1369.4 | 1345.2 | 1338.1 |
| 45° | 6293.1 | 2955.1 | 1340.9 | 1405.0 | 1409.2 | 1309.6 | 1279.7 | 1292.5 | 1299.6 | 1286.8 | 1285.4 |
| 47.5° | 6169.3 | 2724.5 | 1305.3 | 1315.3 | 1352.3 | 1242.7 | 1205.7 | 1207.1 | 1219.9 | 1221.3 | 1215.6 |
| 50° | 5822.0 | 2466.9 | 1262.6 | 1238.4 | 1214.2 | 1172.9 | 1138.8 | 1131.7 | 1144.5 | 1157.3 | 1161.5 |
| 52.5° | 5373.6 | 2220.6 | 1191.4 | 1154.4 | 1097.5 | 1097.5 | 1081.8 | 1059.1 | 1076.1 | 1093.2 | 1098.9 |
| 55° | 5044.8 | 2038.4 | 1090.4 | 1049.1 | 986.5 | 1007.8 | 1005.0 | 985.0 | 1007.8 | 1020.6 | 1024.9 |
| 57.5° | 4371.5 | 1638.4 | 959.4 | 946.6 | 893.9 | 919.6 | 925.3 | 899.6 | 888.2 | 891.1 | 895.4 |
| 60° | 2595.0 | 1057.6 | 865.5 | 864.0 | 817.1 | 847.0 | 864.0 | 838.4 | 804.3 | 808.5 | 814.2 |
| 62.5° | 1164.4 | 808.5 | 747.3 | 741.6 | 740.2 | 778.6 | 797.1 | 772.9 | 724.5 | 728.8 | 734.5 |
| 65° | 733.1 | 698.9 | 649.1 | 649.1 | 671.9 | 704.6 | 718.8 | 698.9 | 643.4 | 636.3 | 642.0 |
| 67.5° | 680.4 | 650.5 | 599.3 | 589.3 | 600.7 | 627.7 | 629.2 | 590.7 | 558.0 | 552.3 | 552.3 |
| 70° | 610.7 | 587.9 | 538.1 | 518.1 | 513.9 | 512.4 | 508.2 | 498.2 | 476.9 | 471.2 | 474.0 |
| 72.5° | 505.3 | 489.7 | 458.4 | 437.0 | 425.6 | 424.2 | 407.1 | 398.6 | 380.1 | 377.2 | 375.8 |
| 75° | 334.5 | 338.8 | 338.8 | 335.9 | 326.0 | 321.7 | 303.2 | 294.7 | 273.3 | 264.8 | 263.3 |
| 77.5° | 197.9 | 202.1 | 207.8 | 209.2 | 207.8 | 207.8 | 190.7 | 180.8 | 159.4 | 148.0 | 145.2 |
| 80° | 121.0 | 123.8 | 126.7 | 131.0 | 125.3 | 121.0 | 105.3 | 95.4 | 85.4 | 78.3 | 76.9 |
| 82.5° | 78.3 | 81.1 | 82.6 | 85.4 | 82.6 | 76.9 | 64.1 | 58.4 | 51.2 | 45.6 | 44.1 |
| 85° | 44.1 | 45.6 | 48.4 | 48.4 | 44.1 | 39.9 | 32.7 | 28.5 | 24.2 | 21.4 | 21.4 |
| 87.5° | 15.7 | 15.7 | 15.7 | 17.1 | 14.2 | 12.8 | 8.5 | 5.7 | 4.3 | 4.3 | 4.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-750-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 4884
 CIE u': 0.2101
 CIE v': 0.4904
 Duv: 0.0037
 CIE x: 0.3493
 CIE y: 0.3624
 CIE z: 0.2884
 Peak Wavelength (nm): 444
 Dominant Wavelength (nm): 571
 Purity: 13.7
 Rf: 74.9
 Rg: 96.3

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.5 | | |
| R1: | 70.5 | R9: | -28.4 |
| R2: | 77.7 | R10: | 48.6 |
| R3: | 84.6 | R11: | 73.2 |
| R4: | 74.7 | R12: | 50.7 |
| R5: | 71.9 | R13: | 71.2 |
| R6: | 70.7 | R14: | 91.4 |
| R7: | 81.2 | | |
| R8: | 56.9 | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-4-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-4-R4

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

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TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)